

PROCEEDINGS  
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NEW SPECIES OF GRASSES FROM CENTRAL  
AMERICA.

BY A. S. HITCHCOCK.

During a recent study of the grasses of Central America, including Panama, several new species were noted, which are described below. A few new binomials are included.

*Arundinaria viscosa* Hitchc., sp. nov.

Culms erect, rather slender, 2 to 4 meters tall, mottled with purple, more or less branched below; sheaths glabrous, mottled with purple, the summit naked; ligule firm, truncate, about 1 mm. long; blades gradually narrowed from near the asymmetric rounded or truncate base to acuminate apex, 10 to 20 cm. long, 3 to 5 cm. wide, glabrous on the upper surface, scaberulous and glaucous beneath, scabrous on the margin, the petiole 2 to 3 mm. long; panicle large and diffuse, 15 to 20 cm. long and about as wide, the branches and axis viscid, the branches solitary, slender, spreading; spikelets on the branchlets of the third or fourth order; spikelets 1.5 to 2.5 cm. long, compressed, 3 to 6-flowered, mottled with purple, rather soft and papery; glumes 2, 5-nerved, broad, minutely pubescent, the first 3 to 5 mm. long, the second about 1 cm. long; lemmas faintly several-nerved, minutely pubescent, acute, awnless, 10 to 15 mm. long; palea nearly as long as the lemma.

Type in the U. S. National Herbarium, no. 577479, collected in forests at the summits of Velirla, Copey, Costa Rica, 1800 to 2700 meters, February, 1898, by A. Tonduz (Herb. Inst. Phys. Geogr. Nat. Costaric. no. 11729).

Other specimens are: Cerros de Velirla, Copey, *Tonduz*, Herb. Inst. Costaric. 11793; between la División and Lagunilla, *Pittier*, Herb. Inst. Costaric. 10526; northeast of El Copey, *Standley* 41944, all from Costa Rica; Puerta La Cruz, Venezuela, alt. 2000 meters, *Jahn* 1308.

*Arundinaria standleyi* Hitchc., sp. nov.

Culms glabrous, branching, slender, erect, pendent or procumbent, as much as 3 meters long, about 1.5 mm. thick; sheaths glabrous, ciliate, rather sparsely fimbriate at the throat; ligule very short, truncate; blades

flat, thin, lanceolate or oblong-lanceolate, glabrous on the upper surface, the larger ones 8 to 12 cm. long, 1 to 2 cm. wide, rounded or somewhat cuneate at the asymmetric base, the petiole 1 to 2 mm. long, the apex sparsely hispidulous beneath, scabrous on the margins, acuminate; racemes terminating short leafy branches, 5 to 8 cm. long, the rachis slender, strongly zigzag, the internodes straight, concave on one side, mostly 1 to 1.5 cm. long, diverging sharply at the base of each spikelet; spikelets on very short pedicels, slender, terete, straight, 1 to 2 cm. long, less than 1 mm. wide, 4 to 8-flowered; glumes somewhat tawny, unequal, the first 5-nerved, 3 to 4 mm. long, the second 7-nerved, 4 to 5 mm. long; lemmas minutely pubescent, 9-nerved, about 6 mm. long, narrowed to an obtuse point, awnless, the rachilla glabrous; palea nearly as long as the lemma, softly ciliate on the keels.

Type in the U. S. National Herbarium, no. 1307242, collected in wet forest at El Muñeco, on the Río Navarro, Province of Cartago, Costa Rica, altitude 1400 to 1500 meters, March 6, 1926, by Paul C. Standley and Rubén Torres (no. 51060). The only other specimen seen is *Standley & Torres* 50897 from the same locality.

***Arthrostylidium maxonii* Hitchc., sp. nov.**

Main canes smooth, slender, mostly not more than 2 mm. in diameter, erect or climbing, as much as 4 meters long; fertile shoots very slender, 10 to 20 cm. long; sheaths densely pubescent on one side near the margin, bearing at summit several slender bristles as much as 5 mm. long; ligule very short; blades delicate, 1 to 3 cm. long, about 3 mm. wide, scaberulous on the margins and upper surface, pubescent in a line near one margin beneath and sparsely hispidulous on the remainder of the surface; racemes 1 to 1.5 cm. long, the spikelets almost sessile, divergent from the glabrous axis horizontally or nearly so; spikelets 8 to 10 mm. long, terete; first glume 1 mm. long, 1-nerved; second glume 2 to 3 mm. long, about 5-nerved, sterile lemma about 5 mm. long, 5-nerved, the glumes and sterile lemma glabrous; fertile lemmas 2 or 3, acuminate but not awned, pubescent, 5-nerved; palea nearly as long as lemma, glabrous on the keels.

Type in the U. S. National Herbarium, nos. 1180144, 1180145, and 1215531 (being three sheets of a single specimen), collected just inside thick wet forest on steep slope at Santa Clara de Cartago, Costa Rica, altitude 1950 meters, July 20, 1923, by William R. Maxon (no. 8154).

Other specimens, all from Costa Rica, are: *La Estrella*, *Standley* 39096, 39105, 39179, 39411; *El Muñeco*, *Standley* 33643, 33812, *Standley & Torres* 50981; *Yerba Buena*, *Standley & Valerio* 49781.

***Chusquea heydei* Hitchc., sp. nov.**

Central culm as much as 5 mm. in diameter; fertile shoots in fascicles on the central culm, slender, 10 to 20 cm. long, the lower part with bladeless sheaths, the upper part with one or two foliage leaves; sheaths glabrous, finely ciliate on the collar and with a few long hairs at the sides of the summit; ligule very short; blades of fertile shoots lanceolate, thin, scaberu-

lous, slightly hispidulous beneath at base, 2 to 5 cm. long, 4 to 8 mm. wide, cuneate but scarcely petiolate at base, acuminate at apex, with 2 more prominent veins on each side of the midrib; panicles ovoid, open, 6 to 8 cm. long, the branches single, spreading, the rachis terete, glabrous, the spikelets on branches of second or third order, all spreading; spikelets elliptic, strongly nerved, glabrous, 8 to 9 mm. long, about 2 mm. wide; glumes rounded, unequal, the second about 1 mm. long; sterile lemmas a little less than half as long as the spikelet, acutish, thin, rather weakly 3-nerved; fertile lemma acute, prominently 9-nerved, the palea a little longer.

Type in the U. S. National Herbarium, no. 731141, collected at Santa Rosa, Guatemala, altitude 3000 to 4000 meters, May, 1892, by Heyde and Lux (no. 3566).

Other specimens are, Mexico: El Tiber, 150 meters, Michoacán or Guerro, *Langlassé* 288; Cerro Campana, 400 meters, Oaxaca, *Makrinius* 601.

*Chusquea subtessellata* Hitchc., sp. nov.

An erect shrub 1 to 3 meters tall, the branches erect; sheaths pubescent, becoming glabrous; ligule very short; blades appressed, firm, linear-lanceolate, as much as 10 cm. long and 1 cm. wide, glabrous, tessellate-veined especially beneath, rounded to a nearly sessile base, the apex acuminate to a firm rather rigid point, the margin indurate and scabrous; panicles narrow, condensed, but scarcely spikelike, 7 to 10 cm. long, dark purple, the rachis and appressed branches pubescent; spikelets glabrous, 5 to 6 mm. long; glumes obtuse, the first 1 mm., the second 2 mm. long; sterile lemmas apiculate, 5-nerved, nearly as long as the spikelet; fertile lemma apiculate, obscurely 5-nerved, the palea a little shorter.

Type in the U. S. National Herbarium, no. 821342, collected on Cerro de la Muerte, Costa Rica, January, 1891, by A. Tonduz (no. 3367). Also collected on Cerro de las Vueltas, on paramos, altitude 2700 to 3000 meters, by Standley and Valerio (no. 43620, sterile). A third specimen is doubtfully referred to this species, *Pittier* 3069, from El Potrero Camp, Chiriquí Volcano, Panama, altitude 2800 to 3000 meters. The panicles are less condensed, and the branches less appressed.

The species is allied to *C. tessellata* Munro, but differs in the less spicate inflorescence.

*Poa guatemalensis* Hitchc., sp. nov.

Perennial, apparently with creeping rhizomes; culms decumbent at base, glabrous, about 40 cm. tall, the nodes mostly 3 or 4; sheaths minutely scaberulous; ligule membranaceous, acute, about 3 mm. long; blades flat, lax, 1 to 2 mm. wide, glabrous, slightly scabrous on the upper surface; panicle open, 6 to 8 cm. long, the axis glabrous or somewhat scabrous above, the branches mostly in pairs, slender, flexuous or drooping, naked below, 2 to 3 cm. long, bearing a few spikelets on the upper half; spikelets 4 to 5 mm. long, mostly 2 or 3-flowered, the rachilla glabrous; glumes 1.5

and 2 mm. long; lemmas glabrous throughout, somewhat compressed, rather indistinctly nerved, acute, purple-tinged at summit, 3 mm. long, 1 mm. wide.

Type in the U. S. National Herbarium, no. 924985, collected in shade at medium altitude on Volcano Agua, Guatemala, December 5, 1911, by A. S. Hitchcock (no. 9115).

***Trisetum irazuense* (Kuntze) Hitchc.**

*Calamagrostis irazuensis* Kuntze, Rev. Gen. Pl. 2:763. 1891.

*Trisetum scabriflorum* Hitchc. Contr. U. S. Nat. Herb. 24:358. 1927.

***Trisetum pringlei* (Scribn.) Hitchc.**

*Graphephorum pringlei* Scribn.; Beal, Grasses N. Amer. 2:561. 1896.

***Calamagrostis guatemalensis* Hitchc., sp. nov.**

Culms erect from a creeping base, 30 to 60 cm. tall; sheaths overlapping, glabrous or slightly scaberulous; ligule 2 to 3 mm. long; blades numerous on lower part of plant, firm, flat, becoming involute, 1 to 3 mm. wide, scabrous on both surfaces; panicles narrow, condensed, sometimes interruptedly spikelike, 7 to 12 cm. long, purplish or brownish, the branches ascending or appressed, as much as 3 cm. long, floriferous nearly to the base; glumes equal, acute, scaberulous, 4 to 5 mm. long; lemma minutely scaberulous, 4 mm. long, the narrow apex with 4 fine teeth, the callus hairs about half as long as the lemma; awn attached less than 1 mm. above base, the twisted straight part nearly as long as the lemma, the terminal part bent sharply to one side, 3 to 6 mm. long; rachilla prolongation a little more than 1 mm. long, clothed with hairs about 2 mm. long.

Type in the U. S. National Herbarium, no. 844985, collected in humus on the upper part of Volcano Agua, Guatemala, about 3000 meters altitude, December 5, 1911, by A. S. Hitchcock (no. 9120). Other specimens examined are: Volcano Agua, 2700 meters, *Kellerman* 4747; Cerro Quemado, *Kellerman* 5579; Volcano Atitlán, 3100 meters, *Kellerman* 6259.

This species differs from *C. recta* of the Andes in the rhizomatous base, the flat blades (later becoming involute) and the looser shorter panicle.

***Gymnopogon aristiglumis* Hitchc., sp. nov.**

Perennial; culms ascending from a decumbent base, hard and wiry, glabrous, 80 to 100 cm. long, many-noded, the lower part lacking foliage, clothed with bladeless or nearly bladeless sheaths; sheaths glabrous, ciliate on the margin, mostly shorter than the internodes; ligule a very short ciliate membrane 0.2 mm. long; blades rather stiffly diverging, flat, glabrous on the surfaces, scabrous on the margin, somewhat cordate at base, contracting into a short somewhat ciliate petiole, the larger ones 5 to 8 cm. long, 5 to 10 mm. wide; panicles of several very slender soft racemes 20 to 35 cm. long, along a main axis 15 to 20 cm. long, the main axis somewhat scabrous, the branches pilose at the base, very scabrous; spikelets

mostly 2-flowered with a rudiment of a third floret, distant on the lower part of the rachis, approximate above, the pedicels slender, 1 to 2 mm. long; glumes narrow, scabrous, 2 and 3 mm. long, gradually narrowed to a slender straight scabrous awn about 1 cm. long; first lemma narrow, nearly terete, obscurely 3-nerved, ciliate, slightly lobed at the base of the awn, 2 to 2.5 mm. long, the awn 1 to 2 cm. long, the palea as long as the lemma; second lemma similar but a little smaller, the rudiment about two-thirds as long as the lemma, jointed at apex and bearing an awn nearly as long as that of the lemma.

Type in the U. S. National Herbarium, no. 1169956, collected at Rosario, El Salvador, January, 1924, by Salvador Calderón (no. 1924). Other specimens are: San Salvador, *Calderón* 949; Cerro de San Jacinto, *Calderón* 2072; Volcano San Salvador, *Hitchcock* 8941.

This species differs from *G. spicatus* (Spreng.) Kuntze in the larger blades, panicles, and spikelets, and especially in the long-awned glumes.

***Leersia grandiflora* (Doell) Hitchc.**

*Oryza monandra* var. *grandiflora* Doell in Mart. Fl. Bras. 2:9. 1871.

*Homalocenchrus grandiflorus* Hitchc. Contr. U. S. Nat. Herb. 17:273. 1913.

***Trichachne pittieri* (Hack.) Hitchc.**

*Panicum pittieri* Hack. Oesterr. Bot. Zeitchr. 51:367. 1901.

*Valota pittieri* Chase, Proc. Biol. Soc. Washington 19:188. 1906.

***Digitaria hirtigluma* Hitchc., sp. nov.**

Culms glabrous, rather robust, about 50 cm. tall (lower part wanting in specimen examined); sheaths keeled, glabrous or somewhat scabrous; ligule membranaceous, truncate, pubescent, 1 to 2 mm. long; blades flat, rounded or slightly cordate at base, scabrous, more or less pilose on upper surface especially toward base, 4 to 7 mm. wide, 10 to 15 cm. long (upper one or two only ones seen); panicle 10 to 18 cm. long, the common axis scabrous, about 7 cm. long, villous at base of racemes; racemes 8 to 10, ascending, whitish, 10 to 15 cm. long, the rachis angular, scabrous, very narrowly winged; spikelets about 2.5 mm. long (including the hairs), mostly in 4's on the rachis, 2 with pedicels about 1 mm. long, 2 with pedicels 3 to 4 mm. long, the pedicels scabrous or scabrous-hirsute, curved or flexuous; first glume wanting; second glume narrower than the fruit and two-thirds as long, pilose between the nerves and on the margins, the hairs toward the tip stiffer, somewhat rufous, extending nearly a millimeter beyond; sterile lemma as long as the fruit, densely pilose or appressed-hirsute, except along the midnerve, the hairs extending as a stiff brush beyond the tip; fruit elliptic, 2 mm. long, 0.6 mm. wide, chestnut, somewhat apiculate.

Type in the U. S. National Herbarium, no. 1152125, collected at San Salvador, El Salvador, in August, 1922, by Salvador Calderón (no. 1153).

The type is the only specimen seen. The species belongs to the *adusta* group, resembling *Syntherisma fiebrigii* (Hack.) Chase of Paraguay, based on *Panicum fiebrigii* Hack. of which Hackel cites two specimens, *Fiebrig*

5371 and 5375. The two specimens seem not to be conspecific but the type is assumed to be no. 5371. Fiebrig's no. 5375 resembles *Digitaria hirtigluma* but differs in having a broader second glume and a softer pubescence. The blades of *Panicum fiebrigii* are described as glabrous, while the blades of *Digitaria hirtigluma* are scabrous and pilose. In the U. S. National Herbarium are fragments of *Fiebrig* 5371 and 5375 from the Hackel Herbarium, only the former showing blades.

***Digitaria curtigluma* Hitchc., sp. nov.**

Perennial; culms cespitose in large bunches, erect, slender especially at base, 1 to 1.5 meters tall; sheaths glabrous; ligule very short; blades flat, elongate, narrowed toward base, long-acuminate, glabrous, somewhat scabrous on the margins, somewhat pilose on upper surface near base, 4 to 7 mm. wide, as much as 40 cm. long; panicle 15 to 18 cm. long, the common axis scabrous, 3 to 4 cm. long; racemes 5 or 6, ascending, 10 to 15 cm. long, the rachis winged, the margins as wide as or wider than the central part, scabrous on the angles; spikelets in pairs, about 2.3 mm. long, the pedicels flat, scabrous-hirsute on the angles, the longer about 4 mm. long; first glume wanting; second glume glabrous, obtuse or somewhat notched, one-fifth to one-fourth as long as the fruit; sterile lemma as long as the fruit, 5-nerved, the lateral pair of nerves close together near the margin, appressed-pubescent on the internerves; fruit dark brown, very convex, minutely punctate in striae.

Type in the U. S. National Herbarium, no. 927689, collected on rather open cut-over hillside, El Boquete, Province of Chiriquí, Panama, about 1200 meters altitude, September 28, 1911, by A. S. Hitchcock (no. 8176).

This species belongs to the *adusta* group and is allied to *Digitaria adusta leiantha* (Hack.) Parodi which has glabrous spikelets with longer first glume.

***Digitaria velutina* (DC.) Hitchc.**

*Milium velutinum* DC. Cat. Hort. Monsp. 126. 1813.

*Milium filiforme* Lag. Gen. & Sp. Nov. 2. 1816.

*Digitaria mollissima* Schrad.; Link, Hort. Berol. 1:229. 1827.

*Paspalum? velutinum* Kunth, Rév. Gram. 1:27. 1829.

*Panicum mollissimum* Kunth, Rév. Gram. 1:33. 1829.

*Syntherisma velutina* Chase, Proc. Biol. Soc. Washington 19:191. 1906.

***Thrasya villosa* Hitchc., sp. nov.**

Perennial; culms erect, villous, 15 to 30 cm. tall; sheaths villous; ligule obtuse, less than 1 mm. long; blades flat, villous or velvety-pubescent, 2 to 4 mm. wide, 5 to 10 cm. long; racemes several from the main culm and the erect branches, slightly curved, 2 to 5 cm. long, long-villous at the base, the rachis less than 0.5 mm. wide, villous with long and short hairs intermixed, rounded on the outside, flat on the inside, not margined or inrolled; spikelets about 2.5 mm. long, densely pubescent; first glume minute or obsolete; second glume narrower than the fruit and somewhat

shorter; sterile lemma as long as the fruit, concave between the lateral nerves, the palea as long as the lemma; fertile lemma whitish, appressed-hirsute, acutish.

Type in the U. S. National Herbarium, no. 715585, collected in savannas, at Cerro Vaca, eastern Chiriquí, Panama, alt. 900 to 1136 meters, December 25 to 28, 1911, by H. Pittier (no. 5363).

**Mesosetum pittieri** Hitchc., sp. nov.

Plant apparently annual, the culms spreading, 10 to 30 cm. long, the nodes hispidulous; blades flat, glabrous, distantly setulose on the thickened margin, sparingly pilose near base, 3 to 4 mm. wide, 2 to 5 cm. long; raceme 2 to 4 cm. long; spikelets about 5 mm. long, nearly sessile; first glume a little shorter than the equal second glume and sterile lemma, laterally compressed, narrowed to the middle and then widened to a rounded crest-like tip, pilose on the lower part of the keel; second glume laterally compressed above, narrowed to a crestlike acute tip, pilose at the base, sparingly villous on the lower half of the back, 5-nerved, cross-ridged toward the apex; sterile lemma similar to the second glume, the crested tip less acute; fertile lemma acute, shorter than the second glume.

Type in the U. S. National Herbarium, no. 679914, collected at Sabana de Juan Corso, near Chepo, Province of Panama, Panama, altitude 60 to 80 meters, October, 1911, by H. Pittier (no. 4751). Other specimens are Pittier 4516 and 4687, both from the vicinity of Chepo.

Differs from *M. sclerochloa* (Trin.) Hitchc. in the somewhat smaller slightly pilose spikelets. In the latter the spikelets are glabrous, more indurate and the glumes and sterile lemma are irregularly toothed or notched at apex.

**Axonopus blakei** Hitchc., sp. nov.

Culms densely cespitose, erect, about 60 cm. tall, the nodes densely villous; sheaths villous, especially at the collar; blades folded at base, flat above, 2 to 4 mm. wide, papillose-pilose, as much as 25 cm. long; racemes mostly 3, the lower 2 to 3 cm. below the other 2, pubescent at the base, 7 to 12 cm. long; spikelets 3 mm. long, the second glume and sterile lemma pilose along the margins and apex, sparingly pilose along the back, the hairs toward the tip as much as 1 mm. long.

Type in the U. S. National Herbarium, no. 1012987, collected on an open grassy plain, at Cristina, Department of Izabal, Guatemala, May 22, 1919, by S. F. Blake (no. 7611). Blake 7658, collected at the same place, is the only other specimen known.

The species resembles *A. poiophyllus*, but the latter is nearly glabrous throughout, the sheaths are distinctly compressed-keeled, and the spikelets are only slightly pubescent.

**Lasiacis scabrior** Hitchc., sp. nov.

Culms climbing or straggling, woody, as much as 3 meters tall, pubescent or glabrescent; sheaths more or less hispidulous, densely villous on the

margin; ligule prominent, brown, mostly 3 to 5 mm. long; blades rather firm, elliptic-lanceolate, mostly 8 to 12 cm. long and 1 to 1.5 cm. wide, harshly scabrous on the upper surface, puberulent beneath; panicles not much exerted, ovoid, rather densely flowered, mostly 5 to 6 cm. long, sometimes as much as 10 cm., the branches spreading, or the lower finally reflexed, the axis and branches pubescent; spikelets ovoid, pale, about 4 mm. long.

Type in the U. S. National Herbarium, no. 725618, collected on the border of forest at Cubilquitz, Guatemala, altitude 350 meters, February, 1913, by H. von Tuerekheim (no. 4036).

Other specimens are: Costa Rica, *Herb. Inst. Phys.-Geogr.* 2247, 3245, 3365, 3646, 6540, 7465, 8527, 9213, 9492, 10946, *Standley* 37178, *Standley & Valerio* 45897, 47117, *Standley & Torres* 47507, *Jiménez* 720; Nicaragua, *Baker* 2454; Panama, *Dunlap* 406.

This species resembles *L. ligulata* in the long ligule but differs in the thick blades scabrous above, the hispid sheaths and the compact panicle.

*Lasiacis standleyi* Hitchc., sp. nov.

Culms branching and straggling, mostly 1 to 2 meters tall, rooting at the nodes with slender branching stilt roots; sheaths glabrous or hispidulous; ligule prominent, brown, 3 to 5 mm. or even 8 mm. long; blades narrowly elliptic-lanceolate, 10 to 15 cm. long, 1 to 2.5 cm. or rarely 3 cm. wide, somewhat falcate, scabrous on the upper surface, minutely pubescent, beneath; panicles 10 to 15 cm. long, the few branches stiffly ascending, the spikelets somewhat clustered toward the ends of the scabrous branches and branchlets; spikelets ovoid-globular, pale or finally dark, about 4 mm. long.

Type in the U. S. National Herbarium, no. 1307185, collected in moist forest, at La Tejona, north of Tilarán, Province of Guanacaste, Costa Rica, altitude 600 to 700 meters, January 25, 1926, by Paul C. Standley and Juvenal Valerio (no. 45839).

Other specimens, all from Costa Rica, are: *Standley & Valerio* 45532, 45820, 46140, 47160, 49785, 50068, *Standley & Torres* 50979.

The species has the habit and panicle of *L. rhizophora* but differs in the long ligule and narrower blades.

*Olyra standleyi* Hitchc., sp. nov.

An erect caespitose perennial; culms 1 to 3 meters tall, puberulent below the nodes, the nodes in dry specimens presenting one or two raised dark sharp edges, sometimes hirsutulous on these ridges; sheaths glabrous; ligule very short, shorter than the somewhat flaring border at the top of the sheath; blades oblong-elliptic, glabrous, as much as 17 cm. long and 4 cm. wide (the lower not seen), somewhat cordate at base, puberulent on the upper surface at base and on the short petiole; panicle of several fastigiate branches spreading at maturity, the axis extending above the whorl and bearing one or two ascending branches, the main branches 8 to 12 cm. long, bearing appressed spikelets, 1 to 4 pistillate spikelets on the

upper part, staminate spikelets below, the peduncle and base of the branches more or less puberulent, smaller secondary panicles from the upper sheaths; staminate spikelets about 1 cm. long, the lemma narrow, acuminate-pointed, the palea a little shorter, acute; pistillate spikelets on clavate pedicels, the glume and sterile lemma glabrous, 5-nerved, rather thin, somewhat reticulate with cross veins, gradually narrowed into an acuminate scaberulous point, the glume (including the point) about 2 cm. long, the sterile lemma a little shorter; fruit narrow, about 8 mm. long, narrowed to an obtuse apex, glabrous, minutely pitted, the pits oblong; palea nearly as long as the lemma, almost inclosed by the margins of the lemma.

Type in the U. S. National Herbarium, no. 1307238, collected in moist forest, at El Muñeco on the Río Navarro, Province of Cartago, Costa Rica, altitude 1400 to 1500 meters, March 6 to 7, 1926, by Paul C. Standley and Rubén Torres (no. 50932). It was collected in the same region in 1924 by Standley (no. 33878).

The species is allied to *O. heliconia* Lindm. and *O. fasciculata* Trin. of Brazil. The former differs in having 7-nerved glumes and sterile lemma on the pistillate spikelet. The latter has a more distinctly pitted fruit with nearly circular pits; the blades are unequally truncate at base. In both species the culms and nodes are glabrous and the panicles are much larger. In habit, because of its numerous secondary panicles, *O. standleyi* resembles *O. surinamensis* Hochst. of the Guianas. It is the only species with pitted fruit known outside of South America.

***Raddia costaricensis* Hitchc., sp. nov.**

An erect caespitose perennial; culms stiff, sometimes bent at the nodes, glabrous, 20 to 30 cm. tall; sheaths densely hirsute; blades close together from the overlapping sheaths, rather firm and stiffly spreading, oblong-lanceolate, rounded at base, acute, 3 to 4 cm. long, 4 to 6 mm. wide, villous beneath, glabrous or sparsely hirsute on the upper surface, revolute in drying; staminate panicles narrow, terminal, pale, the spikelets 3 to 4 mm. long; pistillate panicles lateral, consisting of a few (apparently 1 or 2) pistillate spikelets and several staminate ones below, the pistillate spikelets glabrous, 7 mm. long, with an apiculation 1.5 mm. long; staminate spikelet glabrous, pale, 3 mm. long.

Type in the U. S. National Herbarium, no. 825690, collected in forests of the valley of the Río Hondo near Madre de Dios, Costa Rica, 200 meters altitude, November, 1896, by H. Pittier (no. 10352). No other specimens have been seen.

This species is well distinguished by the hirsute sheaths.

***Trachypogon stenophyllus* (Roem. & Schult.) Hitchc.**

*Andropogon angustifolius* H. B. K. Nov. Gen. & Sp. 1:184. 1816. Not

*A. angustifolius* Sibth. & Smith, 1806.

*Andropogon stenophyllus* Roem. & Schult. Syst. Veg. 2:819. 1817.

*Trachypogon angustifolius* Nees, Agrost. Bras. 342. 1829.

**Manisurus ramosa** (Fourn.) Hitchc.

*Apogonia ramosa* Fourn. Mex. Pl. 2:63. 1886. Not *Rottboellia ramosa*  
Cav. 1801.

*Rottboellia aurita* subsp. *stigmosa* Hack. in DC. Monogr. Phan. 6:311. 1889.

*Coelorachis ramosa* Nash, N. Amer. Fl. 17:86. 1909.